

Original Article**Therapy Compliance Level of Chronic Kidney Failure Patients With Hemodialization In The Hemodialization Room**Wahyu Tanoto¹, Moch. Zaenal B.²¹STIKES Karya Husada Kediri, East Java, Indonesia

| ARTICLE INFO | ABSTRACT |
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| Article History: Submit : May 30, 2022 Revised : June 13, 2022 Accepted : June 14, 2022 Online : June 30, 2022 | <p>Background: Chronic kidney failure (CKD) is a functional disorder. Chronic kidney disease is progressive and irreversible. Hemodialysis is a technology for kidney function therapy to remove metabolic wastes or toxins from the body. Compliance is the level of accuracy of a person's behavior. This study aimed to determine the level of adherence to therapy for chronic kidney failure patients with hemodialysis in the hemodialysis room at Mardi Waluyo Hospital, Blitar.</p> <p>Methods: The method used in this research is descriptive. The population in this study was 121 respondents. The research sample was 17 respondents. This study uses a "purposive sampling" technique. The research variables were CKD patients with hemodialysis therapy, and the data collection technique used a questionnaire</p> <p>Results: From the data that had received HD information or did not show all of the respondents received HD information, 17 respondents (100%), and none of the respondents who did not receive HD information, 0 respondents (0%). The results showed that all respondents, namely 17 (100%), were obedient in carrying out hemodialysis therapy</p> <p>Conclusion: It is hoped that health workers can determine the level of adherence to therapy for patients with chronic kidney failure with hemodialysis to provide maximum care for patients with chronic kidney failure</p> |
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Introduction

Chronic renal failure (CKD) or end-stage kidney disease is a chronic kidney function disorder that is progressive and irreversible. So kidney function fails to maintain metabolism

and fluid and electrolyte balance which causes the buildup of uremia (retention of urea and other nitrogenous wastes in the blood). To replace essential kidney functions, hemodialysis therapy must be carried out. More and more CKD patients can survive through



hemodialysis therapy ([M. Clevo Rendry & Margareth, 2012](#)). Hemodialysis is a high technology as a kidney function therapy to remove metabolic wastes or toxins from the human blood circulation such as water, sodium, potassium, hydrogen, urea, creatinine, uric acid, and other substances through a semi-permeable membrane as a blood separator. and dialysate fluid in artificial kidneys where diffusion, osmosis, and ultra-filtration processes occur ([Carney, 2020](#); [Gregg et al., 2019](#); [Lv & Zhang, 2019](#))

CKD patients need 12-15 hours per week to do hemodialysis and must be lived for a lifetime to replace damaged kidney function. The compliance of CKD patients in undergoing hemodialysis therapy is an essential thing that should not be violated ([Suwardianto et al., 2017](#); [Usiati, 2011](#)). Compliance, in general, is the level of behavior of a person who receives treatment, follows dietary recommendations, and lives a lifestyle according to health care providers' recommendations. It was recorded that after one year of hemodialysis, the life expectancy increased to 79%.

The population prevalence of chronic kidney failure in the United States at stage 4 or 5 is 0.4%. The variation in the incidence and prevalence of chronic renal failure at stage 5 given therapy is very high, especially in industrialized countries. The prevalence of chronic kidney failure in Indonesia based on a doctor's diagnosis is 0.2% having chronic kidney failure. In East Java alone, the prevalence of chronic kidney failure based on a doctor's diagnosis is 0.3%. Meanwhile, according to data from the Foundation for Kidney Care in 2008 in Indonesia, there were 40,000 patients with Chronic Kidney Failure, which

increased to 70,000 in 2010. The prevalence of chronic kidney failure in Indonesia is 6.2% or 104,000 people in the Indonesian population. It was stated through data obtained from the *Indonesian Renal Registry* that the number of new patients undergoing hemodialysis in 2011 was 15353, and in 2012 there was an increase in patients undergoing hemodialysis. As many as 4268 people, in total, 19621 patients, had just undergone hemodialysis. Until the end of 2012, there were 244 hemodialysis units in Indonesia.

The prevalence of chronic kidney failure at Jemursari Islamic Hospital Surabaya in September 2014, there were several patients with chronic kidney failure who underwent hemodialysis therapy ([Ju et al., 2018a](#); [Sheshadri et al., 2019](#)). The number of patients in the last three months from July to September 2014 was 70, with an average monthly visit of 400 dialyzes. Data were taken by researchers randomly on five patients, 3 (60%) of whom were able to know about medication, laboratories, diet, recommended hemodialysis therapy schedule, steps to take during an emergency, and 3 (100%) adherent to hemodialysis. 2 (40%) did not know about medication, laboratory, dietary diet, recommended hemodialysis therapy schedule, steps to be taken in an emergency and 2 (100%) did not comply with hemodialysis. The prevalence of non-adherence to hemodialysis varies from 12.5% to 98.6%. On June 1, 2018, at the Mardi Waluyo Hospital Blitar, in May - June, 121 CKD patients had undergone hemodialysis.

In kidney failure, some nephrons (including the glomeruli and tubules) are thought to be intact, while others are damaged (the whole nephron

hypothesis). Intact nephrons hypertrophy and produce an increased filtration volume with associated reabsorption even in a state of decreased GFR/filterability. This adaptive method allows the kidneys to function until 3/4 of nephrons are damaged (Heerspink et al., 2020; Viggiano et al., 2020). The load of the material that must be dissolved becomes more significant than that which can be reabsorbed, resulting in an osmotic diuresis accompanied by polyuria and thirst. Furthermore, because the number of damaged nephrons increases, oliguria occurs with the retention of waste products. The point at which the patient's symptoms develop becomes more pronounced, and the typical symptoms of renal failure appear when approximately 80% - 90% of renal function has been lost (Kantar-Zadeh et al., 2021; Lv & Zhang, 2019). At this level, the renal function and the creatinine clearance value drops to 15 ml/min or lower than that (Wilkinson et al., 2019). Dialysis or hemodialysis is done if kidney failure causes brain function abnormalities (uremic encephalopathy), Pericarditis (inflammation of the heart bag), Acidosis (increased acidity of the blood) that does not respond to other treatments, Heart failure, Hyperkalemia (very high potassium levels in the blood) (Saferi & Marisa, 2013). the patient's non-compliance in hemodialysis therapy will significantly affect the body's metabolism, and there will be a buildup of harmful substances in the body because the kidneys cannot filter optimally and are also very dangerous—impact various aspects of patient care. Compliance can be influenced by various factors, including patients' beliefs, attitudes, and motivation, knowledge, perceptions, patient expectations, family social

support, and support from health workers.

Motivation and expectations are factors that increase compliance. Therefore it is essential to assist in undergoing hemodialysis therapy and requires support from health workers (Ju et al., 2018b; Lestari, 2021). So that CKD patients want to carry out hemodialysis therapy routinely, we should convince them of the importance of hemodialysis and give them motivation. Families must also be informed about the importance of carrying out hemodialysis therapy so that families provide strong support for patients.

From the description of the background that has been conveyed, the researchers are interested in researching the "Overview of Adherence Levels in Therapy of CKD Patients in the Hemodialysis Room at the RSUD. Dr. Iskak Tulungagung."

Method

The research design used in this study used a descriptive type of research. The population in this study were CKD patients who underwent hemodialysis therapy in the hemodialysis room at Mardi Waluyo Hospital, Blitar. In this research, the technique used is *purposive sampling*. Researchers took samples in the area of Mardi Waluyo Hospital Blitar as many as 17 respondents. The variable in this study is the level of adherence to therapy for CKD patients with hemodialysis. We are measuring the level of adherence of CKD patients with hemodialysis using a questionnaire. This research has obtained a letter of appropriate research ethics



Results

Table 1. Distribution of respondents based on gender, age, education, occupation, how long have they been running hemodialysis therapy, have received hemodialysis information or not, Blitar, March 2022, (n=17)

| Variable | Frequency | (%) |
|--------------------|-----------|-------|
| Gender | | |
| Male | 13 | 76% |
| Female | 4 | 24% |
| Age | | |
| <21 Years | 0 | 0% |
| 21-30 Years | 0 | % |
| 31-40 Years | 5 | 29% |
| 41-50 Years | 4 | 24% |
| >50 Years | 8 | 47% |
| Education | | |
| No School | 0 | 0% |
| Elementary School | 4 | 24% |
| Junior High School | 6 | 35% |
| Senior High School | 6 | 35% |
| College | 1 | 6% |
| Work | Frequency | (%) |
| Household | 4 | 24% |
| Farmer | 2 | 12% |
| Private | 6 | 35% |
| Civil Servant | 5 | 29% |
| Length of HD | | |
| < 1 Year | 2 | 11.8% |
| 1-2 Years | 13 | 76.5% |

| | | |
|-----------------------|----|----------------|
| 3-4 Years | 2 | 11.8% |
| >4 Years | 0 | 0% |
| Variable | | |
| Ever received HD info | HD | Freque ncy (%) |
| Ever | | 17 100 % |
| Never | | 0 0% |

Table 1 shows that almost all of the respondents are male, 13 respondents or (76%), and a small proportion of respondents are female, four respondents or (24%). For age, data shows almost half of respondents aged > 50 years, eight respondents (47%), almost half of respondents aged 31-40 years, five respondents (29%), and a small portion of respondents aged 41-50 years four respondents (24%) and none of the respondents aged <21 years 0 respondents (0%) and none aged 21-30 years 0 respondents or (0%). From the education data, it shows that a small percentage of respondents have a university education (university) 1 respondent (6%), none of the respondents are TS (not in school) 0 respondents (0%), and a small part of the respondents have an elementary school education four respondents (24%), almost half of the respondents have a junior high school education of 6 respondents (35%). Almost half of the respondents have a high school education of 6 respondents (35%). Employment data shows that a small proportion of the respondents work as Farmers 2 respondents (12%), almost half of the respondents work as IRT 4 respondents (24%), almost half of the respondents work as civil servants, five respondents (29%), almost half of the respondents work PRIVATE 6 respondents (35%). From the old data



running HD, it shows that almost all of the respondents who run HD for 1-2 years are 13 respondents (76.5%), and a small part of respondents who run HD for <1 year two respondents (11.8%), a small part of respondents who run HD is HD 3-4 years two respondents (11.8%), none of the respondents who had HD >4 years 0 respondents. From the data that had received HD information or did not show all of the respondents received HD information, 17 respondents (100%), and none of the respondents who did not receive HD information, 0 respondents (0%).

Table 2. Distribution of adherence levels of chronic renal failure patients with hemodialysis in the hemodialysis room at Mardi Waluyo Hospital, Blitar, March 2022, (n=17)

| Compliance Level | Frequency | (%) |
|------------------|-----------|------|
| Compliant | 17 | 100% |
| Not Compliant | 0 | 0% |

Table shows that all of the respondents comply with HD, 17 respondents (100%), and none of the respondents who do not comply with HD, 0 respondents (0%).

Discussion

Based on the results of research on chronic kidney failure patients in the HD (hemodialysis) room at Mardi Waluyo Hospital, Blitar on May 30 – June 30, 2018, that description of the level of adherence to therapy of chronic kidney failure patients with hemodialysis shows that of 17 respondents all of them adhere to hemodialysis therapy/dialysis (100%),

and none of the respondents who did not comply with hemodialysis therapy (dialysis) 0 respondents (0%).

Compliance is the level of behavior of a person receiving treatment, following dietary recommendations, and living a lifestyle according to health care providers' recommendations (Andra & Yessie, 2013; DiGiulio, 2014). Obedience is essential to develop habits that can help in following a schedule that is sometimes complicated and interferes with daily activities. This makes patients lazy to carry out hemodialysis therapy. Therefore patients need support from their families to be able to adhere to hemodialysis therapy (Donahoe, 2009; Ju et al., 2018a; Smeltzer, 2014). Compliance occurs when the rules of a healthy lifestyle, good nutrition, and the rules of therapy that have been given can be followed correctly (Notoatmodjo, 2014). Factors that affect adherence include: gender, age, education level, occupation, experience or length of time running hemodialysis therapy, and having received hemodialysis information or not (Hasina et al., 2019; Jacobson et al., 2019)

The level of compliance is influenced by age, including the elderly. Elderly, there is a decline in cognitive and psychomotor abilities (Gregg et al., 2019; Wilkinson et al., 2019). Compliance is included in psychomotor abilities that affect the degenerative process so that the degenerative process in the elderly can affect the level of compliance to become disobedient. Although many are over 50 years old with good family support, respondents can comply in carrying out hemodialysis therapy.



In addition to age, education can also affect the level of compliance, and there are four respondents with elementary school education. However, there is still low education, but by providing clear information about the importance of hemodialysis therapy and the dangers of not carrying out hemodialysis therapy by health workers, respondents can understand the importance of carrying out hemodialysis therapy and obey it. Furthermore, the length of time running hemodialysis therapy is also very influential on the level of compliance of respondents in undergoing hemodialysis therapy. Almost all respondents have undergone hemodialysis therapy for more than one year, and all have felt the benefits obtained from carrying out hemodialysis therapy. Therefore respondents will be obedient in carrying out hemodialysis therapy—undergoing hemodialysis therapy. These factors are essential factors that will cause adherence to therapy for chronic kidney failure patients to be obedient in carrying out hemodialysis therapy. The importance of family support, level of knowledge, duration of hemodialysis therapy, and respondents' awareness of complications caused by CKD if they are not obedient to hemodialysis therapy significantly affect the respondents' compliance with hemodialysis therapy.

Conclusion

Based on the results of the study and discussion, it can be concluded that the results of the study, all respondents had a good level of compliance, and all respondents were obedient in carrying out hemodialysis therapy according to the schedule given, and this was due to

support from family and transparent information about the importance of hemodialysis by health workers. It is expected that patients with chronic kidney failure always routinely carry out hemodialysis therapy that has been scheduled and always carry out what has been recommended by the hospital

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